



PLANS AND SUGGESTIONS

FOR

DWELLINGS ADAPTED TO THE WORKING CLASSES,

INCLUDING THE

MODEL HOUSES FOR FAMILIES

BUILT BY COMMAND OF

HIS ROYAL HIGHNESS THE PRINCE ALBERT, K.G.,

IN CONNEXION WITH

THE EXPOSITION OF THE WORKS OF INDUSTRY OF ALL NATIONS, 1851.

PUBLISHED BY

The Society for Improving the Condition of the
Labouring Classes,

21, EXETER HALL, LONDON.

Price Sixpence.

1851.

THE Society seeks to promote the important objects for which it is constituted by
the following means:—

First. By arranging and executing Plans, as Models, for the Improvement of the Dwellings of the Working Classes, both in the Metropolis and in the manufacturing and agricultural districts: by establishing the Field Garden and Cottage Allotment System, and also Friendly or Benefit and Loan Societies, upon sound principles, and reporting the results, with a view to rendering them available as Models for more extended adoption.

Secondly. By the formation of County, Parochial, and District Associations, acting upon uniform plans and rules.

Thirdly. By correspondence with Clergymen, Magistrates, Landed Proprietors, and others disposed to render assistance in their respective localities, either individually, or as members of Local Associations.

26.11.67.

SOCIETY FOR IMPROVING THE CONDITION OF THE LABOURING CLASSES,

TO WHICH THE LABOURER'S FRIEND SOCIETY IS UNITED.

INCORPORATED BY

ROYAL CHARTER.



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COMMITTEE ROOM—NO. 21, EXETER HALL, STRAND.

MODEL HOUSES FOR FOUR FAMILIES,

ERECTED AT THE CAVALRY BARRACKS, HYDE PARK,

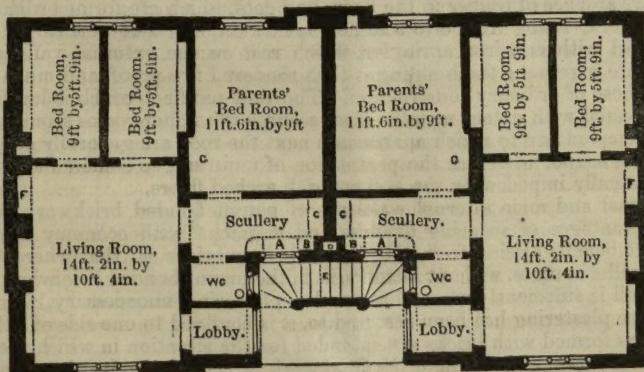
IN CONNEXION WITH

THE EXPOSITION OF THE WORKS OF INDUSTRY OF ALL NATIONS, 1851,

BY COMMAND OF

HIS ROYAL HIGHNESS PRINCE ALBERT, K.G.,

PRESIDENT OF THE SOCIETY FOR IMPROVING THE CONDITION OF THE LABOURING CLASSES.



A Sink, with Coal Box under.

B Plate Rack over entrance to Dust Shaft, D.

C Meat Safe, ventilated through hollow bricks.

E Staircase of Slate, with Dust Place under.

F Cupboard warmed from back of Fireplace.

G Linen Closet in this recess if required.

Scale of feet.

HIS ROYAL HIGHNESS has had this building raised on his own account, with a desire of conveying practical information calculated to promote the much needed improvement of the dwellings of the Working Classes, and also of stimulating Visitors to the Exhibition, whose position and circumstances may enable them to carry out similar undertakings, and thus without pecuniary sacrifice, permanently to benefit those who are greatly dependent on others for their home and family comforts.

In its *general arrangement*, the building is adapted for the occupation of four families of the class of manufacturing and mechanical operatives, who usually reside in towns, or in their immediate vicinity; and as the value of land, which leads to the economizing of space, by the placing of more than one family under the same roof, in some cases, renders the addition of a third, and even of a fourth story desirable, the plan has been suited to such an arrangement, without any other alteration than the requisite increase in the strength of the walls.

The most prominent peculiarity of the design is that of the receding and protected central open staircase, with the connecting gallery on the first floor, formed of slate, and sheltered from the weather by the continuation of the main roof, which also screens the entrances to the dwellings.

The four tenements are arranged on precisely the same plan, two on each floor.

The entrance is through a small *lobby*, lighted from the upper part of the door.

The *living room* has a superficial area of about 150 feet, with a closet on one side of the fire-place, to which warm air may be introduced from the back of the range; over the fire-place is an iron rod for hanging pictures; and on the opposite side of the room a shelf is carried above the doors, with a rail fixed between them.

The scullery is fitted up with a sink, beneath which is a coal-bin of slate; a plate-rack at one end, drained by a slate slab into the sink, covers the entrance to the dust-shaft, which is enclosed by a balanced self-acting iron door. The dust-shaft leads into a closed depository under the stairs, and has a ventilating flue, carried up above the roof. The meat safe is ventilated through the hollow brickwork, and shelves are fixed over the doors. A dresser-flap may be fixed against the partition.

The *sleeping apartments*, being three in number, provide for that separation which, with a family, is so essential to morality and decency. Each has its distinct access, and a window into the open air; two have fire-places.

The children's bed-rooms contain 50 feet superficial each, and, opening out of the living room, an opportunity is afforded for the exercise of parental watchfulness, without the unwholesome crowding of the living room, by its use as a sleeping apartment.

The parents' bed-room, with a superficial area of about 100 feet, is entered through the scullery—an arrangement in many respects preferable to a direct approach from the living room, particularly in case of sickness. The recess in this room provides a closet for linen; and a shelf is carried over the door, with a rail fixed beneath it—a provision which is made in each of the other bed-rooms.

The water-closet is fitted up with a Staffordshire glazed basin, which is complete without any wood fittings, and supplied with water from a slate cistern in common of 160 gallons, placed on the roof over the party and staircase walls. The same pipes which carry away the rain water from the roof serve for the use of the closets.

Constructive Arrangement.

The peculiarities of the building in this respect are, the exclusive use of hollow bricks for the walls and partitions, (excepting the foundations, which are of ordinary brickwork,) and the entire absence of timber in the floors and roof, which are formed with flat arches of hollow brickwork, rising from 8 to 9 inches, set in cement, and tied in by wrought-iron rods connected with cast-iron springers, which rest on the external walls, and bind the whole structure together; the building is thus rendered fire-proof, and much less liable to decay than those of ordinary construction. The roof arching, which is levelled with concrete, and covered with patent metallic lava, secures the upper-rooms from the liability to changes of temperature to which apartments next the roof are generally subject, and the transmission of sound, as well as the percolation of moisture, so common through ordinary floors, is effectually impeded by the hollow-brick arched floors.

The external and main internal walls are of patent bonded brickwork, which has the important advantages of securing dryness and warmth,* with economy of construction; another great benefit arising from the use of hollow bricks is, that where they are laid double, in parallel courses, without headers, as in the patent bonded brickwork, the internal face of the wall is sufficiently smooth to render plastering unnecessary. In the present instance, where plastering has been resorted to, it is confined to one side of a thin partition, or to partitions formed with bricks not intended for the situation in which they are used.

In regard to some other parts of the brickwork, it should also be observed, that owing to the erection of the building having been determined on late in the winter, many difficulties had to be contended with in obtaining a sufficient supply of hollow bricks; and from

* Those who are conversant with the evils resulting from the absorption of moisture by common bricks, and the consequent loss of temperature in rooms by evaporation, will duly appreciate these advantages.

accidental circumstances, disappointments were experienced in reference to a considerable number, on which account the structure should be regarded rather as the pledge of future excellence in hollow-brick construction than as its full accomplishment.

The glazed surface of the bricks used in the two upper-floor living-rooms, and at the foot of the staircase, may be referred to as a specimen of what can be accomplished by the skilful adaptation of fitting materials, and as highly creditable to their maker. Specimens of glazed bricks of clay from the north of Devon are also exhibited.

The advantages afforded by the use of hollow bricks in securing an effective system of insensible *ventilation*, deserves particular notice. Fresh air is admitted from any suitable point of the exterior of the building to a chamber at the back of the living-room fireplace, where being warmed, it may be conducted to any convenient place of exit above the level at which the fresh air is admitted. Vitiated air may be conveyed either into the chimney flue or to any other suitable place of exit through the upper wall courses, perforated for this purpose, beneath the springing of the arch, or through the arch bricks themselves. Suitable air bricks and ventilators have been prepared with these express objects in view.

Internally French plaster has been used, as drying quicker, and having a harder surface than ordinary plaster. The floors, where not of Portland cement, are laid with Staffordshire tiles, excepting to the right-hand room, first-floor, which is of lava. The coping is in Portland cement. The external string courses and internal cornices are patent bonded bricks set in Portland cement with the splayed side outwards.

The mode of fire-proof construction, and the general arrangement of the fittings, are such as have been used in the Model Houses built by the Society for Improving the Condition of the Labouring Classes, to which the architect of this building, Henry Roberts, Esq., F.S.A., also acted as honorary architect.

In most parts of England, the cost of four houses, built on the plan of this model structure, with ordinary materials, and finished similar to the ground-floor apartments, may be stated at £440 to £480, or from £110 to £120 for each tenement, contingent on the facilities for obtaining materials and the value of labour. Such dwellings, let at 3*s. 6d.* to 4*s.* a-week, would, after deducting ground-rent and taxes, afford a return of 7 per cent. on the amount of outlay. Where hollow bricks are obtainable at a fair price, their use ought to effect a reduction of about 25 per cent. on the cost of the brickwork, or equal on these four houses to about £40.

Materials and Fittings used in the Building, with Addresses.

The unglazed hollow bricks have been chiefly made by Clayton's patent brick and tile machines, to which the prize of the Royal Agricultural Society of England was awarded in 1850. The process of manufacture may be seen at the Atlas Works, No. 21, Upper Park-place, Dorset-square, where detailed particulars may be obtained; and also of Mr. John Whitehead, prize brick and tile machine maker, Preston; or at the Society's Office, 21, Exeter Hall, where the Patentee may be addressed by letter.

The patent bonded facing bricks, and those used in the floors and roof, were made at Aylesford, near Maidstone; the patent bonded internal red bricks at the Ruxley works, near Esher, Surrey; and some of the partition bricks at Mr. Cubitt's works, Pimlico.

The white and yellow glazed bricks were made by the Ainslie Company's Machine at Mr. Ridgeway's, Cauldon place, The Potteries, Staffordshire, who also supplied specimens of earthenware pipes, sinks, wash hand basins, and the water-closet pans.

The metallic lava covering to the roof, the floor lava, and the gravel lava to the front, were laid by Messrs. Orsi and Armanie, 6 Guildhall Chambers, Basinghall-street.

The French plaster and the Portland cement floors have been executed by Messrs. J. B. White and Sons, 17, Millbank-street, Westminster.

The floor tiles are from Mr. Peake, Tunstall, Staffordshire, or No. 4, Wharf, Macclesfield-street South, City-road Basin; and from Messrs. H. and R. Haywood, Burslem, Staffordshire, or No. 15, South Wharf, Paddington.

The staining fluid for the wood-work is partly from Ibbotson's Varnish and Colour Works, Hammersmith, and partly from Mr. Arnold, 109, Jermyn-street.

All the traps used in the building are those of Lowe and Co., Salford; Agents, Messrs. Kennard and Co., 67, Upper Thames-street.

The ventilators were made by Hart and Sons, 53, Wych-street, Strand.

The apparatus to the left-hand water-closets was supplied by J. W. Dann, 44, Cromer-st., Gray's Inn-road. The other by G. Jennings, 29, Great Charlotte-street, Blackfriars-road.

The stoves in the left-hand ground-floor rooms are from Mr. Leslie, Conduit-street; in the right-hand room is the "Cottager's Stove," manufactured by D. and E. Bailey, 272, High Holborn. The stoves in the left-hand rooms, first floor, are from Pierce, of Jermyn-street; to the right-hand, the Prize Cottage Range, by Nicholson, of Newark, is fitted in the living-room, and suitable stoves in the bed-rooms, with fire-brick back and cast-iron chimney-piece, by the same maker.

A descriptive account of this building, with Specification, estimate of cost, and a complete set of lithographed working drawings, &c., exhibiting its constructive details, and showing the adaptation of the plan to more lofty buildings, may be obtained of the Society for Improving the Condition of the Labouring Classes, 21, Exeter Hall, Strand, price 5*s.* in cloth.

LODGING-HOUSE FOR UNMARRIED LABOURERS

ADAPTED TO

AGRICULTURAL, MINING, AND QUARRY DISTRICTS.

THE success attending the experiments made by the Society to improve the Lodging-houses in the Metropolis, and the extent to which similar efforts are needed in the country, have led to the consideration of this no less important object, and to the proposing a Lodging-house for unmarried Labourers, designed by their Honorary Architect with a view of embodying the leading features of the Model Lodging-house built by the Society in George-street, St. Giles, together with such of its details as are applicable to the country.

A comfortable, cheap, and healthy abode would thus be provided, free from the temptations to vice and immorality which beset the inmates of a crowded cottage, where, without regard to age or sex, the married and the unmarried too often herd together and contaminate each other. The youth who quits the parental cottage, from its want of accommodation for a growing family, or from the desire of independence, would find in such a house those comforts which the unmarried labourer rarely enjoys, and to attain which he too frequently forms an improvident connexion. Instead of passing his evenings at the beer-shop, he would be led to seek both amusement and instruction in the pages of a selected Library placed under the care of the Superintendent; or his leisure hours might be profitably employed in an allotment garden, if an acre to an acre and a half of ground were devoted to the occupants of such a house.

The number of lodgers which the proposed plan will accommodate, may be either fourteen or sixteen, as two of the compartments are sufficiently large to contain two beds: under ordinary circumstances, it would be preferable to build a second house rather than to increase its size to any considerable extent.

The arrangement provides on the ground-floor two sets of apartments, one intended for the superintendent and his wife; the other for the lodgers, comprises a living room, fitted up with tables and benches, a kitchen, with a pantry having a separate, secure, and well-ventilated safe for the food of each inmate; a fuel store, with a shed for depositing the implements of the inmates, and other conveniences, are placed at the back.

The whole of the upper floor is occupied by the dormitory, subdivided by wooden partitions, six feet six inches high, into fourteen compartments, each 8ft. 6 by 4ft. 8, having its own window, with a door opening from the central corridor, and being fitted up with a bed, a stool, and a locker or clothes-box. The staircase is in the centre. The ventilation of the upper part of the dormitory is effected by openings over the windows in the gable walls.

This effort to improve the moral and physical condition of the agricultural labourer may be made with the prospect of a return on the outlay equal at least to that usually derived from cottages.

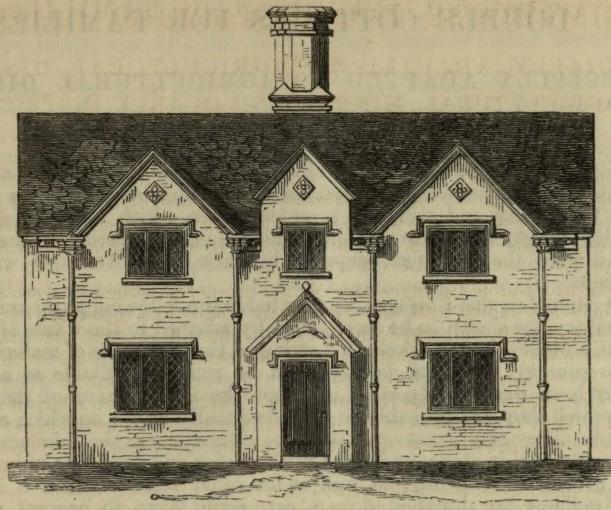
The rent charged must in some measure depend on the cost of the building, and local circumstances; but it is scarcely to be expected that such accommodation can be provided for less than 2*d.* per day, or 14*d.* per week. In some places, 18*d.* or even 2*s.* per week would not be too high a charge. Punctual payment must be strictly enforced; and the occupation should be by the week, subject to such regulations as may ensure the order and comfort of the inmates.

It is suggested that the superintendent be a middle-aged head labourer, married, and without family; and that, as the care of the house would chiefly devolve on the wife, without interfering with the usual daily employments of the husband, a comfortable abode, rent free, might recommend the situation to a respectable couple. Rules for the regulation of the house have been drawn up, and may be obtained of the Society.

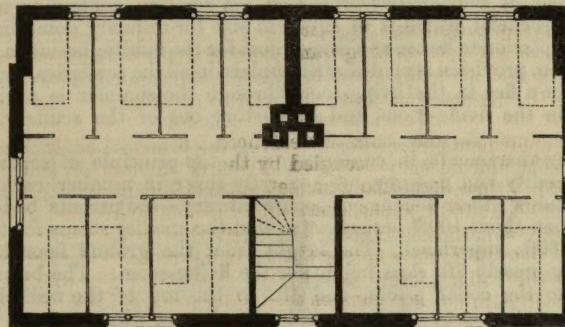
With a view to cases where it is desirable to try the experiment of a Lodging-house, although, from peculiar circumstances, its success may appear doubtful, it should be stated, that in the event of failure, this building, at a cost of about 50*l.*, may be subdivided into two distinct Tenements or Cottages, a second entrance door being formed in lieu of the superintendent's pantry-window.

The cost of the Lodging-house, or of either pair of the Cottages, built in a substantial manner, in the Country or in the neighbourhood of London, must depend so much on the price of materials, as well as the expense of labour and cartage, that no amount can be stated which would guide with accuracy under such varying circumstances; but to facilitate the obtaining builders' estimates, bills of the quantities of materials contained in the Lodging-house and in the other Designs, have been prepared, and, together with Lithographed Working Drawings and a Specification, are sold for the benefit of the Society, at 5*s.* each set. They may be had of the Secretary, Mr. Wood, No. 21, Exeter Hall, London, who will also supply a list of the Society's Publications, which include an Essay on the Dwellings of the Labouring Classes, by Henry Roberts, Esq., F.S.A.—Third thousand, price 3*s.*

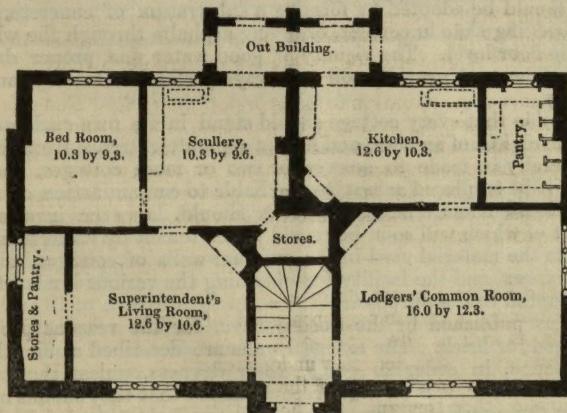
LODGING-HOUSE FOR UNMARRIED LABOURERS.



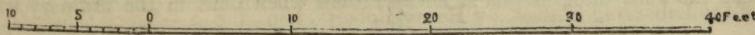
FRONT ELEVATION.



DORMITORY, OR UPPER FLOOR PLAN.



GROUND FLOOR PLAN.



DOUBLE COTTAGES FOR FAMILIES,

ESPECIALLY ADAPTED TO AGRICULTURAL DISTRICTS.

To facilitate the adoption of plans which combine in their arrangement every point essential to the health, comfort, and moral habits of the labourer and his family, with that due regard to stability and economy of construction, which is essential to their general usefulness, the Society for Improving the Condition of the Labouring Classes has published a series of designs for Cottages, prepared by their Hon. Architect with these special objects in view.

The five pairs of double Cottages represented in the following pages are selected as those which experience has shown to be most generally adapted to the wants of the labourer.

It should, however, be remarked, that owing to the difference of material used in various parts of the country, no set of designs could be rendered suitable to all circumstances; hence it has been deemed advisable to adapt the arrangement of these designs to the material in which they will probably be most frequently built; on which account, brick has been selected. They may, however, with some alterations in the thickness of the walls, be executed equally well in stone, or in flint, with quoins and dressings of brick or stone.

On the ground of economy, as well as for other reasons which it is unnecessary to detail, the dwellings are designed in pairs, care being taken to prevent, as far as possible, the interference of adjoining families with each other, by placing the entrance doors at the opposite extremities of the cottages, whilst, by carrying up the chimney-stack in the centre, the greatest possible amount of warmth is obtained from the flues.

Each dwelling consists of a living-room, the general superficial dimensions of which are about 150ft. clear of the chimney projection. A scullery, containing not less than about 60ft. or 70ft. superficial, which is of sufficient size for ordinary domestic purposes, without offering the temptation to its use as a living-room for the family; besides a copper, and in some cases a brick oven, provision is made for a fire-place in all the sculleries, by which arrangement the necessity for a fire in the living-room through the summer is avoided. A pantry for food, a closet in the living-room, and a fuel-store out of the scullery, are provided in all the cottages.

The sleeping apartments, in conformity with the principle of separating the sexes, so essential to morality and decency, are generally three in number, each having its distinct access and a window; their dimensions somewhat vary—the parents' bed-room in no instance contains less than about 100ft. superficial, whilst the smaller rooms for the children average from 70ft. to 80ft. superficial. The height from the ground floor to the first floor is 8ft. 9in., giving nearly 8ft. clear height for the living-room. The bed-rooms are 7ft. 9in. where ceiled to the collar pieces, and 4ft. to the top of the wall-plate, which, for the security of the roof, is in no case severed by the dormer windows.

The following practical suggestions are offered on the most important points connected with Cottage building:—

In reference to situation, where it is practicable, the front should have somewhat of a southern aspect; the embosoming in trees should be avoided, and particular attention ought to be paid to secure a dry foundation; where this is not otherwise obtainable, artificial means should be adopted by forming a substratum of concrete, about twelve inches thick, or by bedding slate in cement, or laying asphalt through the whole thickness of the wall under the floor level. The vicinity of good water and proper drainage are points of obvious importance. A gravelly soil is always preferable to clay, and a low situation is seldom healthy.

It is desirable that every cottage should stand in its own enclosed garden of not less than about one-eighth of an acre, and have a separate entrance from the public road. One well may generally be made to answer for two or more cottages, and it is of great importance that it be so placed as not to be liable to contamination either from the drains, cesspools, or liquid manure tank; the latter should, however, invariably be made watertight, the cost of which will soon be repaid to the tenant by its fertilizing products.

As respects the material used in the external walls of cottages, much must depend on local circumstances, and the facility for obtaining the various kinds of natural or artificial substances adapted to the purpose.

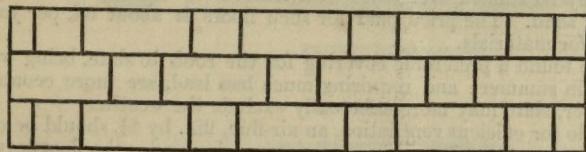
The designs published by the Society have, for the reasons previously stated, been wholly arranged for brick. The external walls are described as 9in. thick, and when built of this substance, in order to secure their dryness, unless the bricks are unusually impervious to moisture, it is strongly recommended that they should be hollow. This may be effected by three methods, two of which require that the bricks be made on purpose. The plan No. I may be used with advantage, unless where the bricks are so porous as to cause a transmission of moisture through the heading courses, it will be found to render the walls drier as well as cheaper than when built in the ordinary way. Three

courses, with the joints, rise 1ft., the bricks being $3\frac{1}{2}$ square; they are of the ordinary length—viz., 9in.

The other plan, No. 2, is that of hollow bricks made wedge-shaped, and bonded longitudinally over each other, so that two cavities run parallel through every course of bricks, giving a double security against moisture, as the joints are all broken, and there are no headers to pass through the wall; the rise of these bricks is also three courses to the foot, and they are 12in. long, which diminishes the number of joints, and gives greater boldness to the work, more resembling stone in effect. These bricks are patented; they may be easily made, under licence of the Patentee, with any good tile machine at a small cost per thousand above that of sound common stocks; whilst from their increased size, which adds but little to their weight, nine of them will do the same number of cube feet of walling as sixteen ordinary stocks, whereby a saving of from 25 to 30 per cent. will be effected. The saving in mortar is full 25 per cent., and the labour, to an accustomed workman, considerably less than in ordinary brickwork; whilst great facility is afforded by the cavities both for ventilation and warming. The bricks for the quoins and jambs may be either solid or perforated perpendicularly, or stone may be used.

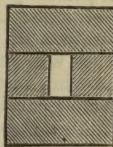
Where it is impracticable to obtain bricks made according to either of the forms above described, the walls may be built hollow, 11in. wide, with common bricks (see Plan No. 3); a cavity of 2in. being left in the centre, and the length of the headers made up with 2-inch closers, every course would bond, and a dry wall be secured.

No. 1.



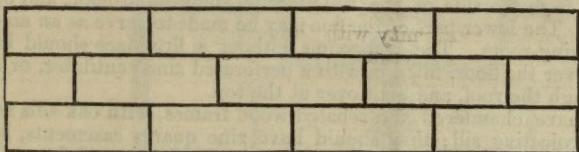
9in. HOLLOW BRICK WALLING, AS AT WOBURN.

SECTIONS.



--- 9" ---

No. 2.

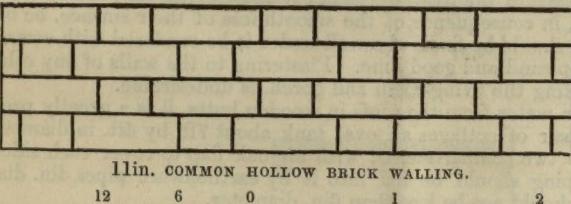


9in. PATENT BONDED HOLLOW BRICK WALLING.



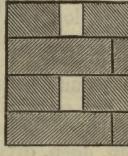
--- 9" ---

No. 3.



11in. COMMON HOLLOW BRICK WALLING.

12 6 0 1 2



--- 11" ---

3 feet.

Where flint or concrete is used, the walls cannot be less than 12in. thick with either material; they may be lined with the patent hollow brick, which would bond every course, and secure the dryness of the wall.

Concrete walls are composed of gravel, lime, and sand, and they are worked up between two planks on a frame, within which the concrete is poured; they may be "splashed" over outside, which gives them a neat appearance. Concrete formed with clean coarse gravel, sharp sand, and $\frac{1}{10}$ th portion of Portland cement, would make a substantial wall.

Chalk has been used for the walls of cottages in some districts with satisfaction, and when hardened by immersion in silicate of potash, its value as a building material is increased.

Where the walls are of stone, their dimensions must be increased externally to not less than eighteen inches, and in such case six inches should be added to the height of the roof, to preserve its proportions.

The main partitions on the ground floor should be of brick—hollow bricks, where obtainable, may with advantage and economy be used for this purpose, and are stronger when set

in cement. Where the upper floor partitions stand perpendicular over those to the ground floor, brick or tile is decidedly preferable to wood. Partitions formed with hollow bricks may in many cases be carried on a strong binding joist.

The ground floor should be raised not less than six inches above the external surface, and where wood floors are used they ought to be ventilated by means of air-bricks built in the external walls. The warmest and most economical floor is probably that formed with hollow bricks. In some parts of the country, lime and sand-floors are pretty generally used, and found to last, when well made, upwards of forty years. The following description of the mode of working them may be useful:—A foundation or substratum should be prepared, about six inches thick, with coarse gravel or brick-bats and lime-core, well beaten to a level surface; in damp situations, tar may be added to this concrete, on which is to be laid the lime and ash floor, thus prepared—take good washed sand, free from all earth and small stones, together with the ashes of lime, fresh from the kiln, in the proportions of two-thirds of sand and one-third of lime-ashes, (where obtainable, the substitution of one-third portion of smith's-ashes, or pounded coke, for one half of the sand, increases the durability and hardness of the floor.) Mix the sand and lime ashes well together, and let them remain in a body for a fortnight, in order that the lime may be thoroughly slaked; then temper the mortar, and form the floor with it three inches thick, well floated, and so worked that it be not trodden on until it has laid for three days, when it should be well rammed for several successive days, until it becomes hard, taking care to keep the surface level; then use a little water, and smooth it with a trowel; after this, keep the floor free of dirt, and when perfectly dry, it may be rubbed over twice with linseed oil, which gives the appearance of stone instead of sand. The price paid for such floors is about 6d. per yard for labour, and 8d. per yard for materials.

Tiles will generally be found a preferable covering for the roofs to slate, being warmer in the winter and cooler in summer; and requiring much less lead, are more economical. In some localities, however, slate may more effectually exclude the weather.

With a view to provide for efficient ventilation, an air-flue, 9in. by $4\frac{1}{2}$, should be carried up in one of the jambs of the ground-floor chimney, commencing under the floor-level, and passing into the flue from the bed-room chimney, an opening being formed into it immediately under the ceiling of the living-room, filled in with a plate of perforated zinc. The bed-room over the living-room may be aired and warmed by a pipe $2\frac{1}{2}$ inches diameter, passing through this flue from the side of the fire-place on the ground-floor, and opening into the bed-room above. The lower part of the flue may be made to serve as an air-feeder to the fire-place of the living-room. The bed-rooms without a fire-place should have an aperture in the partition over the door, filled in with a perforated zinc ventilator, or an air-pipe may be carried through the roof, and bent over at the top.

The windows should have chamfered and rebated wood frames, with oak sills set on a stone or moulded brick projecting sill; they should have zinc quarry casements, hung to open outside, with proper stay-bar fastenings; the shutters of the ground-floor windows may be conveniently arranged to answer the purpose of a table, by hingeing them so as to fall under the window.

The plastering to the walls of the living-room in cottages, where they are built with the patent hollow bricks, may, in consequence of the smoothness of their surface, be omitted. In other cases, a chair rail should be fixed, the wall under it be rendered with cement, and above plastered with sharp sand and good lime. Plastering to the walls of any other part of the ground floor, excepting the living-room and porch, is undesirable.

In lieu of receiving rain water from the roofs in wooden butts, it is a greatly preferable plan to form between a pair of cottages an oval tank about 7ft. by 4ft. in diameter, and 3ft. 6in. deep, divided into two compartments, with an oak flap to cover each side. The water from the gutter piping should be led into it by earthenware pipes 4in. diameter. Soil drains of any length should not be less than 6in. diameter.

In cases where the closets are constructed under the roof of the dwelling-house, though entered from the outside, it is important that pans should be used for conveying the soil to a cesspool or liquid manure tank formed without the building. These are most efficacious when supplied with water, as they may be at a little extra expense from the lift pump in the scullery, which can readily be made to fill a small cistern or reservoir fixed a little above the seat. These may be of cast-iron, built in the wall, or of earthenware.

The following plan has proved effectual in situations where it was otherwise difficult to blind or conceal the closets, when erected as an out-building: the appearance of a pile or stack of fuel-wood is given by a casing of split or half-round larch timber laid horizontally, and having short pieces of whole timber at the angle spiked to the ends of each alternate layer; the interior framing may be bricknoged, and the roof of slab slate, or strong zinc. These and other outbuildings might with advantage be constructed with common hollow bricks 5in. or 6in. wide.

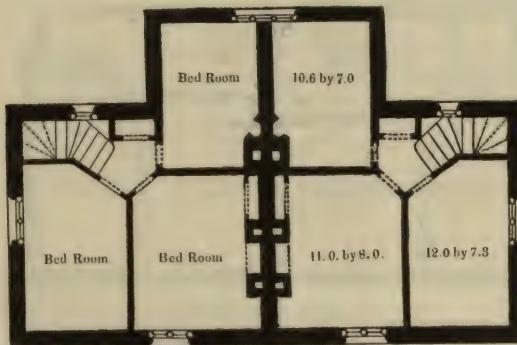
The use of hollow bricks for enclosure or division walls would secure greater durability, and in many cases be but little more expensive than wooden fencing.

Lithographed working drawings for these and other designs for Cottages, with Specification and Bills of Quantities, may be purchased at the Society's Office, 21, Exeter Hall, Strand.

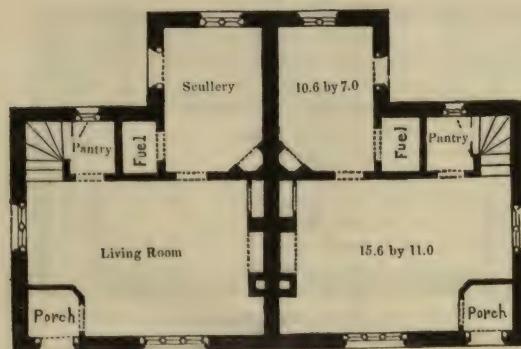
DOUBLE COTTAGES FOR FAMILIES. No. 3.



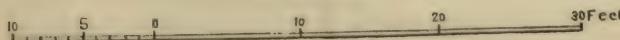
FRONT ELEVATION.



UPPER FLOOR PLAN.



GROUND FLOOR PLAN.

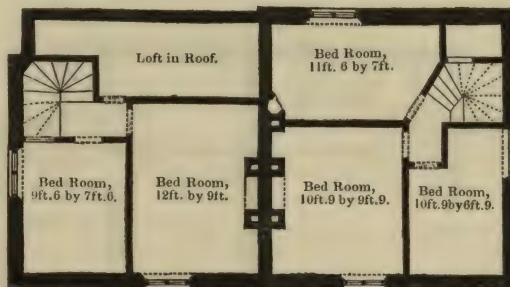




DOUBLE COTTAGES FOR FAMILIES. No. 4.



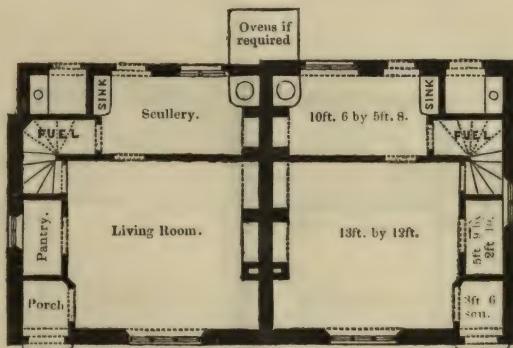
FRONT ELEVATION.



UPPER FLOOR PLAN.

With Two Bed Rooms.

With Three Bed Rooms.



GROUND FLOOR PLAN.

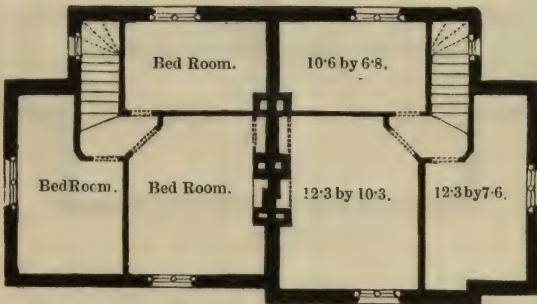
10 0 10 20 30 feet.



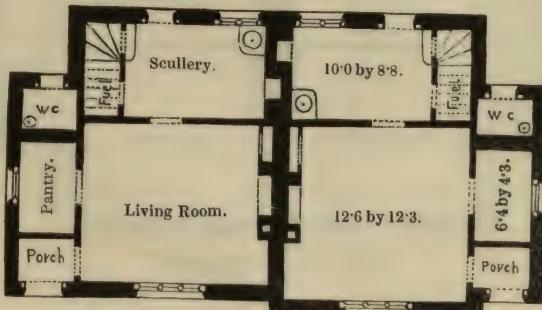
DOUBLE COTTAGES FOR FAMILIES. No. 5.



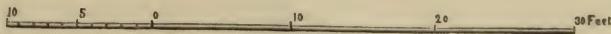
FRONT ELEVATION.



UPPER FLOOR PLAN.

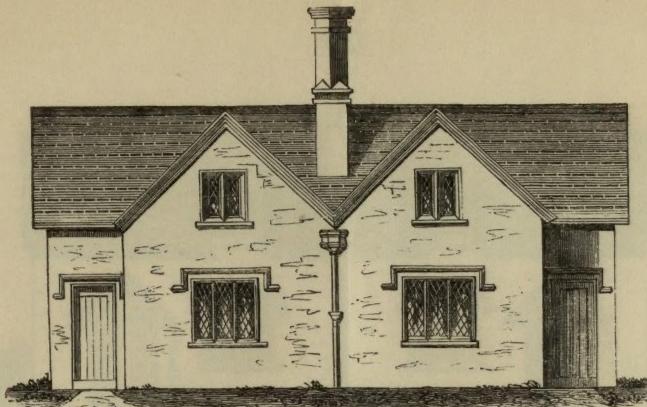


GROUND FLOOR PLAN.

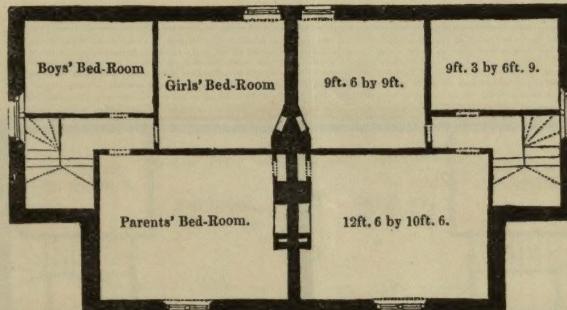




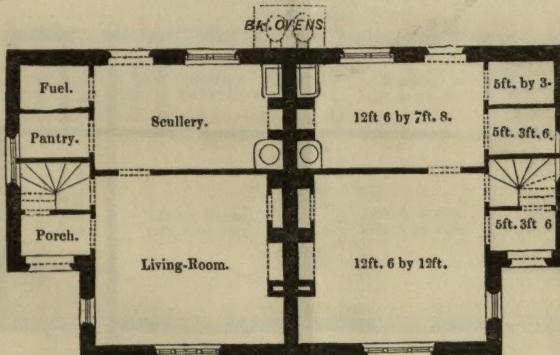
DOUBLE COTTAGES FOR FAMILIES. No. 6.



FRONT ELEVATION.



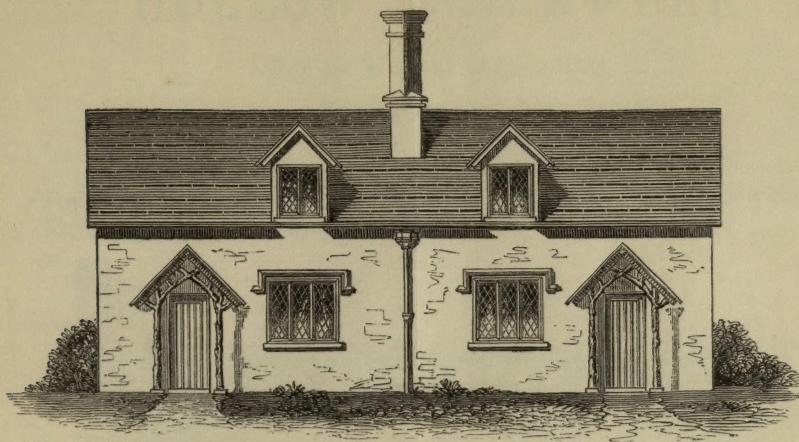
UPPER FLOOR PLAN.



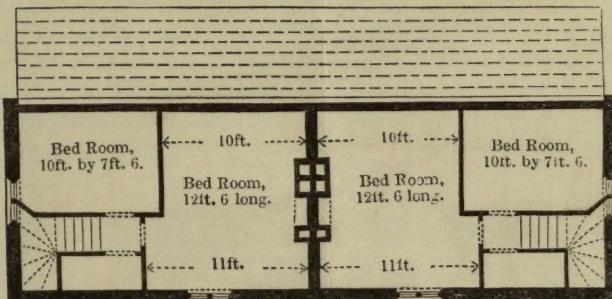
GROUND FLOOR PLAN.

10 5 9 10 20 20 feet.

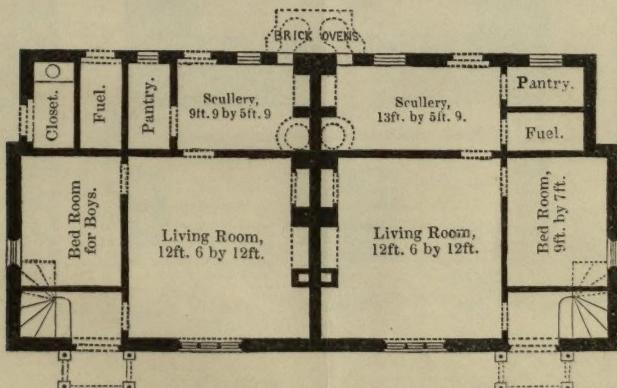
DOUBLE COTTAGES FOR FAMILIES. No. 7.



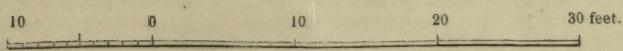
FRONT ELEVATION.



UPPER FLOOR PLAN.

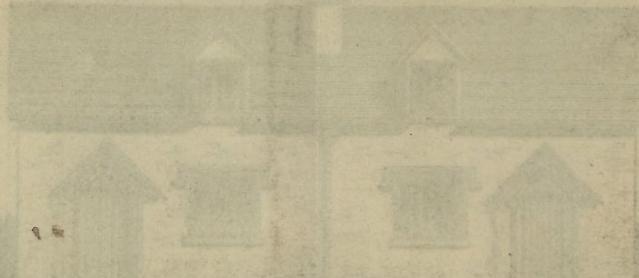


GROUND FLOOR PLAN,
Showing Two Arrangements of Offices.

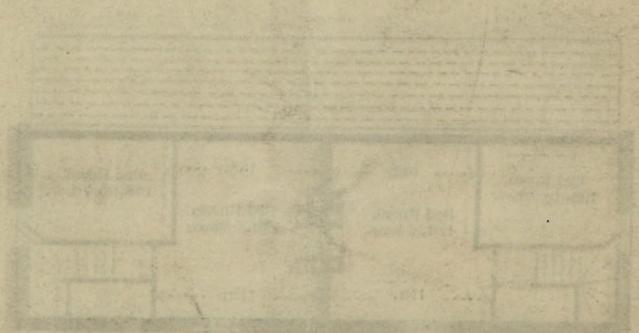


H. ROBERTS, F.S.A., HON. ARCHT.

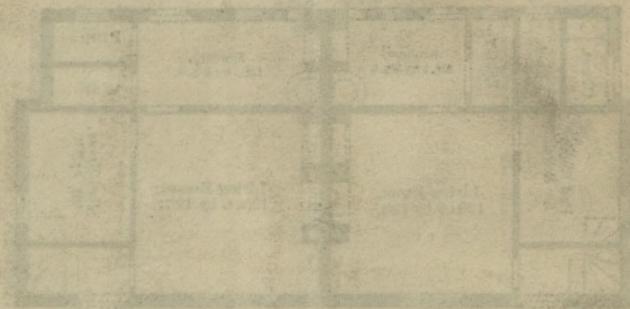
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THE THREE



THE THREE



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